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Life Calls, containing full information on the non-sale of game; 95,000 cards, urging a vote "yes" and containing skeleton argument; 49,000 circular "letters to voters"; 8,200 multigraphed, personally signed letters. In addition hundreds of letters were mailed as a part of regular correspondence. Three separate batches of pertinent paragraphs were sent to the 825 newspapers of the state. Many special articles were prepared, and published by various magazines and newspapers in the state. Street car advertising was resorted to in several of the large cities. More than one hundred lectures were given under the auspices of the campaign, latterly accompanied by moving pictures. All in all, it is believed that fully one million of the citizens of California were acquainted with the reasons for the no-sale law and urged to vote favorably upon it.

PUBLICATIONS REVIEWED

GAME PROTECTION AND PROPAGATION IN AMERICA. A HANDBOOK OF PRACTICAL INFORMATION FOR OFFICIALS AND OTHERS INTERESTED IN THE CAUSE OF CONSERVATION OF WILD-LIFE. By HENRY CHASE (J. B. Lippincott Company, Philadelphia and London, September, 1913, v, pp. 1-238).

If courses in game protection and conservation should be given in our universities and colleges, and there is no question but that they should be a part of the curriculum, it would be difficult to find a suitable textbook. The best thing we have yet seen which would be available for such use is a recent book by Henry Chase entitled: "Game Protection and Propagation in America." Mr. Chase, with his long experience as a game warden, is well qualified to write "a handbook of practical information for officials and others interested in the cause of conservation of wild-life."

One of the strongest chapters in the book is the first one, entitled "Educating the Public—A foreword." In this chapter Mr. Chase points out that the most pressing need of the hour to forward the great movement of conservation of wild-life is *education*. He states further: "The Federal authorities are always happy, and it is their duty, to co-operate with those of the states in their work for better game protection. So it is manifest what should be done. Connected with the game department in each State there should be a bureau of education and publicity, presided over by an expert. With these bureaus co-operating with each other and with the national one, a campaign of education along correct lines can be conducted which will accomplish more and better results in a few years than has been done altogether in the past. This plan would be no experiment with which to waste state funds either. It has now had

the benefit of years of trial; it has been systematized; it has a well-defined and definite course to pursue, and has not been found wanting in efficacy. Unquestionably, nothing can be of more value to the cause of game protection at this time than a systematic campaign of education conducted officially by the game department in every state in the Union, and an extension in the work on that line now being performed by the federal bureau. It is earnestly to be hoped that such a campaign may be started forward."

Certainly Mr. Chase has gotten at the root of the matter, for when the value of birds and the need of their protection and preservation is really appreciated, protective laws will be comparatively unimportant.

The following chapter headings give a good idea of the scope of the book: Why Protect the Game?; Relations of Birds and Mammals to the Natural Resources; Present Meaning of the Term "Game Protection"; Brief Survey of Game Legislation in America; "Sane, Simple and Scientific Game Laws"; Federal Protection of Migratory Birds; Protection of Birds by International Treaties; State Laws and Their Enforcement; Field Work of Game Officers; The Right of Private Property in Game; Re-stocking Game Covers; Propagation of Game Fish; Feeding Game During Severe Winters; and, Hunting Accidents. An appendix furnishes a typical constitution and by-laws for game clubs.

To anyone seeking knowledge of game protection and propagation in America no better source can be found than this excellent treatise by the well known author of "Powers, Duties and Work of Game Wardens," "Modern Doctrine of Game Protection," and "Private Preserves in America." —H. C. BRYANT.

THE RED-WINGED BLACKBIRD: A STUDY IN THE ECOLOGY OF A CAT-TAIL MARSH. By ARTHUR A. ALLEN. Zoological Laboratory, Cornell University. Reprinted from the Abstract of the Proceedings of the Linnaean Society of New York. Nos. 24-25, 1911-1913, pp. 43-128, pls. 1-22. Issued April 15, 1914.

The paper here reviewed is one of that very desirable but as yet relatively rare type of contribution setting forth the biology of a single species. It is also a very good example of that type and introduces several novel features which students working along similar lines might adopt to advantage.

The observations upon which the present paper are based were made at Renwick

Marsh at the head of Cayuga Lake, near Cornell University, Ithaca, New York, and cover a period of several years. Mr. Allen begins the paper with a description of the topographic features of the marsh, its climatic conditions and zonal position. The floras and vertebrate faunas of the several associations are described in detail. The following seven associations are distinguished: open-water, shore-line, cat-tail, sedge, grass, alder-willow, and maple-elm. Some attention is devoted to the succession of associations and the factors which control such succession. A graphic representation following a method commonly used by paleontologists to portray the persistence of faunas shows the associational distribution of the commoner birds and aids in making clear, this, to some, rather intangible segregation of species.

After thus describing its environment, the life history and ecology of the Red-wing are taken up, the following topics being considered: Spring migration, mating and song, nesting, the young, fall migration, enemies, molt and plumage, food and food supply, correlation between changes in food and changes in structure of stomach, and correlation of changes occurring in the reproductive organs.

Seven categories of individuals during the spring migration are distinguished. These, with their typical dates of arrival at Renwick Marsh, are as follows: "Vagrants", Feb. 25-Mar. 4; Migrant adult males, Mar. 13-Apr. 21; Resident adult males, Mar. 25-Apr. 10; Migrant adult females and immature males, Mar. 29-Apr. 24; Resident adult females, Apr. 10-May 1; Resident immature males, May 6-June 1; Resident immature females, May 10-June 11.

Mr. Allen solves the "mysterious disappearance" of the Red-wings for a period after the breeding season by finding that the period in question is that of active molt and that the birds then restrict themselves to the thick growths of tules where they are secure from their enemies. A correlation between the nature of the food and the structure of the stomach was discovered. The musculature of that organ becomes heavier when the birds are feeding upon seeds than when they are subsisting upon insects.

Perhaps the most novel thing in the whole paper is Plate XXI which shows the relative development of the testes and ovaries in resident and migrant birds. A gradual increase in size is demonstrated in both residents and migrants; but corresponding stages appear a month later in the latter

category, so that of two birds collected on any one day in March or April in the same locality, the organs of the resident will be much more fully developed than in the migrant.

Altogether the paper is an excellent example of painstaking, intensive work, replete with observations and relatively free from speculation. Mr. Allen has furnished a standard that future students in the same field may follow to advantage. It will also serve well as a source of information for teachers of ornithology.—TRACY I. STORER.

THE BIRDS | OF | EL PASO COUNTY | COLORADO | By CHARLES E. H. AIKEN | and | EDWARD R. WARREN | Director of the Museum, Colorado College | Parts I and II.—Colorado College Publication; general series, nos. 74, 75, 76; science series vol. XII, no. 13, I, pp. 4+455-496, 2 maps, 15 half-tone figs. on 8 pls.; II, pp. 2+497-603+9 (unpaged index), pls. IX-XXIV which contain half-tone figs. 16-45. Dates on covers: I, May, 1914; II, June-September, 1914. Our copy, both parts, received July 20, 1914.

We have here the most comprehensive county bird list that has come to our attention for a long time. It is far more than a faunal list, nearly every species being accorded more or less biographical treatment, besides full distributional consideration, and occasional critical or systematic notice.

The association of these two authors is a happy one. Mr. Aiken, truly a pioneer, came to Colorado Springs in 1871, and his large collections and notes covering a long period of years contribute to the completeness of the report. The junior author, Mr. Warren, has been doing bird work in El Paso County steadily for the past dozen years. To him has evidently fallen most of the work of compiling the text and seeing to the details of publication.

The paper includes, besides the main annotated list, paragraphs or chapters on topography, life zones, climate, history, bibliography, and analysis of the avifauna. Two maps acquaint the reader with the lay of the land; while forty-five half-tone cuts of birds, nests, and eggs add decidedly to the attractiveness of the paper.

We have found in this contribution several points of particular interest, to only two of which, however, can space here be spared for reference. Exception is taken by Aiken and Warren to the ruling of the A. O. U. Committee regarding the occurrence in Colorado of all three forms of *As-tragalinus psaltria*, namely, *psaltria*, *arizonae*, and *mexicanus*. Oberholser's view, con-